PDR RID Report

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Organization	NASA Headquarters, Code YD		**Review FOS**
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Document	PDR		**Priority** 2

Section NA	**Page** NA	**Figure Table** NA

Category Name Design   **Actionee** HAIS

Sub Category

Subject Lack of EOS Evolution

Description of Problem or Suggestion:

The presentations presented and the PDR requirements as documented together do not show that the current design is capable of evolving as spacecraft are added to the system. The design is sized for AM-1 only with the Local Area Network (FDDI) working as a single failure tolerance system. This appears as a design deficiency when multiple spacecraft will be controlled by this system. It was stated that hooks would be added to the system but simple hooks are a far cry from building multi tasking/processing executive modules (LANs, real time memory/computer resource schedulers, interactive graphic screens and context switching with protective data processing areas).

Originator's Recommendation

Develop a concept presentation that shows how the EOS final configuration will evolve with time and how technology will be inserted into the current design to meet EOS evolutionary development. The concept should include trade studies, LAN resource usage, FDIR analysis to meet 9998 availability and risk management with mitigation measures as necessary. Coordination is necessary with the requirement team to clarify requirements to design to. Reference FOS Requirements Specification for the ECS Project; Volume 1 General Requirements paragraph 4.6 on Operational Availability (pages 4-16 and 4-17).

GSFC Response by: **GSFC Response Date**

HAIS Response by: D. Herring   **HAIS Schedule**   1/13/95

HAIS R. E.   D. Dunn   **HAIS Response Date**   1/30/95

As presented at the PDR, the FOS architecture can be scaled upward or downward to support additional missions. The FOS network was sized to support up to seven missions using higher than expected data rates for the subsequent six missions. Based on these assumptions and the analyses performed, it is felt that the network bandwidth can support the evolution of future EOS missions.

In regards to the FDIR analysis, the RMA approach that FOS took in its evaluation was based on EOSD-3710, which states that "The ECS shall have no single point of failure for functions associated with real-time operations of the spacecraft and instruments".

The FOS development team participates in the ECS Technology Assessment Group to follow future technology that can be inserted into the FOS in the future, and to ensure that FOS can fulfill the inherent evolutionary development of the EOS mission.

While the focus of the PDR was oriented more towards the AM-1 mission, it is inherent in the architecture and design that FOS can be extended to support future missions, and no special presentation is needed.

Status **Closed**	**Date Closed** **2/1/95**	**Sponsor** **Johns**

****** Attachment if any ******